Between Turks Island and Bermuda a LOW developed on the 15th or early on the 16th, and was of comparatively small size for a while but, for the latitude and the time of year, of unusual energy. The British steamer *Bayano*, bound southwestward from Bermuda, had a brief but strenuous encounter with this storm for 3 hours late on the afternoon of the 16th; the greatest force of wind was judged to be 12, this being the third and final report of force 12 from the North Atlantic this month. The further progress of this storm was nearly due northward and late on the 17th it was close to Nova Scotia.

During the final decade of April there was moderate storm activity over and around the Grand Banks and also to eastward near midocean on several days. Close to the American coast there was noteworthy turbulence on the 26th, mainly between Cape Hatteras and Cape May. The LOW concerned had been central near Savannah early on the 25th, with moderate strength, then gained in energy as it took its northeasterly course, finally losing force somewhat on the 27th, as it moved northward and inland.

Fog.—Over and near the Grand Banks and thence westward to the coast of Nova Scotia, fog was of rather frequent occurrence, especially during the period from the 15th to 22d. There was, however, somewhat less fog here than is expected in April. The 5°-square, 40° to 45° N., 45° to 50° W., is reported to have had fog on 9 days.

Greater amounts, in fact the greatest anywhere in North Atlantic waters, were noted near New England, where the square 40° to 45° N., 65° to 70° W., experienced 11 days with fog. Here and to southwestward as far as Hatteras fog was more common than is usual during April.

To southward of Hatteras, as far as southeastern Florida, no fog was noted near the American coast. In the Gulf of Mexico, on the other hand, there was greater frequency than is usual as late as April, especially near the northwestern shore. Two tankers collided early on the 8th, 300 miles off Sabine Pass, because of dense fog; each was somewhat damaged, but was able to make port unassisted.

In comparison with March just preceding, fog decreased in the Gulf of Mexico, but increased in almost every square from Hatteras to beyond the Grand Banks.

From the forty-fifth meridian to the immediate vicinity of the British Isles fog was even more infrequent than usual; some squares along the chief steamship lanes have failed to furnish a single report. The waters around Ireland and England, however, had considerable fog, chiefly during the period from the 4th to 11th.

NORTH PACIFIC OCEAN, APRIL 1937

By WILLIS E. HURD

Atmospheric pressure.—Pressure changes over the North Pacific Ocean during April 1937 were unimportant as compared with the normals of the month, except in Alaskan waters. From Dutch Harbor, with an average pressure of 29.88 (0.10 above the normal), to Juneau, average 29.73 (0.23 below the normal), the range of departure from normal was considerable. Between these two stations, Kodiak had the lowest average pressure, 29.70, shown for North Pacific island stations during the month. The average center of the Aleutian LOW was situated over and near the Gulf of Alaska.

In middle latitudes high pressure prevailed with little intermission from the California coast westward almost to Japan. In the region of the Aleutian Islands the barometer remained high from the 18th to the 30th.

TABLE 1.—*Averages, departures, and extremes of atmospheric pressure at sea level, North Pacific Ocean, April 1937 at selected stations*

Station	Average pressure	Departure from normal	Highest	Date	Lowest	Date
	Inches	*Inch*	*Inches*		*Inches*	
Point Barrow	29.92	−0.17	30.46	22	29.50	25
Dutch Harbor	29.88	+.10	30.64	30	28.94	3
St. Paul	29.86	+.07	30.68	29	28.80	3
Kodiak	29.70	−.05	30.42	24	29.32	1
Juneau	29.73	−.23	30.20	24	29.25	4
Tatoosh Island	29.98	−.02	30.38	16	29.19	12
San Francisco	30.08	+.03	30.27	4	29.76	26
Mazatlan	29.88	−.01	29.96	2, 3	29.78	21
Honolulu	30.05	−.01	30.18	4	29.89	29
Midway Island	30.11	−.01	30.28	5	29.60	23
Guam	29.85	−.04	29.92	1, 2, 6	29.77	25, 26
Manila	29.84	+.02	29.89	20	29.77	4
Hong Kong	29.89	−.01	30.00	5	29.78	12
Nemuro	30.02	+.06	30.42	12	29.44	5

NOTE.—Data based on 1 daily observation only, except those for Juneau, Tatoosh Island, San Francisco, and Honolulu, which are based on 2 observations. Departures are computed from best available normals related to time of observation.

Cyclones and gales.—Cyclonic conditions, except during the first 10 days of April, were far less vigorous than in March, and after the middle of the month declined appreciably in intensity. Following the 20th no accompanying gales in excess of force 8 are at this writing of known record for any part of the ocean. The last gale of force as high as 10 occurred on the 15th, near 40° N., 156° W., barometer 29.74, encountered by the British steamship *Winamac*. The only gale of the month reported as of force 11 was experienced on the 10th by the Japanese motorship *Chichibu Maru*, barometer 29.15, in 35°02′ N., 149°50′ E. Anticyclones persisted over central waters of the ocean, while the cyclones of the month mostly traversed higher latitudes. In consequence, few gales occurred to the southward of the 40th parallel, except to the eastward of Japan where high winds occurred on several days between latitudes 30° and 40° N.

Some cyclones originated this month in far eastern waters and proceeded thence northeastward toward the Aleutians; the two principal disturbances, both originating south of Honshu, were those of the 4th to 7th and the 8th to 10th. The earlier proceeded into the Bering Sea; the later dissipated southwest of the Aleutians. Practically all the stormy weather of the month between Japan and longitude 165° E., including the gales of force 8 to 11 occurring on the 5th to 10th, resulted from the activities of these cyclones. In connection with the earlier cyclone, the American steamship *President Jefferson* had the lowest reported barometer of the month on the North Pacific, 28.63 inches, with a south wind of force 9, in 45°06′ N., 156°26′ E.

During the 1st to 3d the Aleutian LOW attained considerable depth over the southeastern Bering Sea and adjacent Pacific waters, the central pressures being below 29 inches. As a result of this disturbed condition, fresh to strong gales were experienced on the 1st and 2d by ships to the southward of the Aleutians.

Along the eastern half of the middle and northern routes, while some scattered fresh gales occurred late in the month, most of the high wind velocities reported were experienced between the 1st and 15th, inclusive. Of these the most important, of force 10, were encountered by the following ships: The Japanese steamship *Fujisan Maru*, on the 5th, near 43° N., 168° W.; the American steamship *President McKinley*, on the 11th, near 52° N., 143° W.; the British steamship *Toorak*, on the 12th, near 41° N., 136° W.; and the British steamship *Winamac*, on the 15th, near 40° N., 156° W.

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The period 11th to 13th showed the most widespread storminess of the month in west longitudes, to the eastward of the one hundred and forty-fifth meridian, between 40° and 52° north latitude. During this period whole gales were experienced locally a day or two out from the American coast; near the coast fresh gales were met on the 11th southwest of Tatoosh Island, and on the 12th a short distance north of San Francisco. A further coastal gale was that of the 22d, off Point Conception.

In tropical waters the only gale of the month reported was a Tehuantepecer of force 8 which occurred on the 26th.

Fog.—Along the routes north of the fortieth parallel, between 145° W. and 145° E., fog has shown a marked increase in frequency since March. Although fog appears not to have formed over individual 5° ocean regions on more than 2 to 4 days each, yet throughout the area as a whole fog was observed daily from April 16 to 30. Between 29° and 35° N., 165° W. and 165° E. there were 8 days with fog, an unusual number at any season on this part of the ocean. In American coastal waters there was 1 day reported with fog off Washington; there were 4 days, off California; and 7 days, off Lower California.

CLIMATOLOGICAL TABLES

CONDENSED CLIMATOLOGICAL SUMMARY

In the following table are given for the various sections of the climatological service of the Weather Bureau the monthly average temperature and total rainfall; the stations reporting the highest and lowest temperatures, with dates of occurrence; the stations reporting the greatest and least total precipitation; and other data as indicated by the several headings.

The mean temperature for each section, the highest and lowest temperatures, the average precipitation, and the greatest and least monthly amounts are found by using all trustworthy records available.

The mean departures from normal temperatures and precipitation are based only on records from stations that have 10 or more years of observations. Of course, the number of such records is smaller than the total number of stations.

TABLE 1.—*Condensed climatological summary of temperature and precipitation by sections, April 1937*

[For description of tables and charts, see REVIEW, January, p. 35]

Section	Temperature								Precipitation					
	Section average	Departure from the normal	Monthly extremes						Section average	Departure from the normal	Greatest monthly		Least monthly	
			Station	Highest	Date	Station	Lowest	Date			Station	Amount	Station	Amount
	°F.	°F.		°F.			°F.		In.	In.		In.		In.
Alabama	63.4	−0.2	2 stations	92	[1] 19	2 stations	29	[1] 1	7.03	+2.53	Fairhope	18.30	Demopolis	2.94
Arizona	58.7	−1.4	Agua Caliente	105	15	Bright Angel	10	7	.10	−.49	Bright Angel	.91	43 stations	.00
Arkansas	61.7	+.2	Newport	96	17	Gilbert	20	6	3.18	−1.63	St. Francis	6.23	Monticello [2]	1.30
California	53.5	−2.7	2 stations	101	15	Soda Springs	2	23	1.42	−.22	Crescent City (near)	16.76	10 stations	.00
Colorado	43.9	+.2	Las Animas	95	16	Pearl	−12	9	.99	−.76	Westcliffe	3.63	Ignacio	.01
Florida	68.9	−.9	Bushnell	94	29	Garniers (near)	36	1	4.98	+2.09	Pensacola	17.03	Key West	.13
Georgia	62.0	−1.3	3 stations	93	[1] 19	2 stations	24	12	6.96	+3.17	Canton	10.23	Savannah No. 1	4.15
Idaho	41.7	−3.3	Indian Cove	87	26	Blackfoot Dam	−6	6	2.44	+1.02	Deception Creek	8.54	Mackay	.09
Illinois	51.6	−.5	5 stations	91	[1] 17	2 stations	23	[1] 10	4.82	+1.42	Mount Vernon	7.74	Keithsburg	2.40
Indiana	51.2	−.6	Elliston	93	17	3 stations	23	[1] 11	5.00	+1.48	Frankfort	7.47	Vevay	2.64
Iowa	47.7	−1.0	Omaha, Nebr	85	22	Inwood (near)	20	8	3.20	+.49	Grundy Center	4.88	Thurman	1.45
Kansas	54.3	−.4	Ashland	98	16	Oberlin	15	5	1.00	−1.53	Independence	4.42	Johnson	.03
Kentucky	55.9	−.2	3 stations	91	[1] 17	Farmers	22	12	4.38	+.40	Paducah	6.21	Grant	2.51
Louisiana	66.5	−.6	Uranis	91	30	4 stations	32	[1] 1	3.44	−1.18	New Orleans	7.42	Grand Coteau	.44
Maryland-Delaware	51.2	−.9	2 stations	94	18	Oakland, Md	19	1	6.38	+2.93	Clear Springs, Md	12.99	Delaware Breakwater, Del.	3.59
Michigan	41.5	−1.2	Saranac	80	29	Sidnaw	−1	3	3.73	+1.27	Ganges	8.18	Calumet	1.00
Minnesota	40.7	−2.3	3 stations	76	[1] 19	2 stations	4	[1] 1	3.82	+1.73	Wheaton	6.33	Farmington	1.51
Mississippi	64.8	+.2	2 stations	94	17	do	30	[1] 1	4.08	−.75	Fruitland Park	9.54	Stoneville	.91
Missouri	54.5	−.7	3 stations	93	17	Licking (near)	21	[1] 6	4.04	+.13	Lockwood	7.95	Macon	1.22
Montana	42.5	−.4	Garland	85	15	Hebgen Dam	−2	3	.92	−.21	Heron	4.34	Choteau	.05
Nebraska	48.2	−1.0	Franklin	94	22	Hyannis	11	9	1.15	−1.22	Westpoint	3.82	Sidney	.11
Nevada	47.5	−.4	Logandale	94	15	San Jacinto	12	[1] 10	.48	−.28	Lamoille	2.00	3 stations	.00
New England	43.0	−.7	3 stations	76	[1] 15	First Conn. Lake, N. H.	−4	1	3.88	+.54	Gloucester, Mass	7.25	Squa Pan Dam, Maine.	.63
New Jersey	49.3	−.4	2 stations	85	18	Runyon	16	1	4.64	+1.03	Freehold	5.79	Newton	3.05
New Mexico	51.6	.0	Portales	96	18	Selsor Ranch	−2	5	.39	−.48	Corona	1.85	29 stations	.00
New York	43.5	−.7	Port Jervis	78	18	Stillwater Reservoir	1	1	3.59	+.60	Fredonia	7.10	Gabriels	7.14
North Carolina	57.7	−.1	Shelby	92	18	Mount Mitchell	13	12	5.86	+2.25	Swansboro	14.90	Marshall	3.24
North Dakota	40.7	−.7	2 stations	79	[1] 15	Parshall	3	3	2.02	+.59	2 stations	5.53	Crosby	.32
Ohio	49.7	.0	Portsmouth	90	23	2 stations	20	12	3.95	+.82	Napoleon	6.05	Waverly	2.21
Oklahoma	60.9	+.6	5 stations	97	16	do	21	5	2.30	−1.03	Antlers	5.85	Hooker	T
Oregon	43.8	−3.3	Oakridge	86	27	Austin	1	11	4.13	+2.11	Valsetz	18.54	Warmspring Reservoir.	.58
Pennsylvania	47.7	−.9	Arendtsville	89	18	6 stations	19	[1] 1	5.53	+2.09	Arendtsville	9.49	Gratersford	2.78
South Carolina	61.0	−1.3	3 stations	91	23	Long Creek (near)	23	12	6.66	+3.49	Dillon	12.16	Gaston Shoals	3.42
South Dakota	43.8	−1.9	Hot Springs	88	15	Camp Crook	−4	4	1.69	−.36	Sisseton	5.54	Dowling	.17
Tennessee	58.3	−.3	2 stations	91	[1] 17	Rugby	22	12	4.26	−.17	Sewanee	7.36	Moscow	1.55
Texas	66.3	+.2	do	112	28	Pampa	20	5	1.04	−1.99	Wiergate	6.11	3 stations	.00
Utah	44.8	−2.2	Hanksville	90	[1] 14	Silver Lake	−1	8	.92	−.26	Silver Lake	4.04	4 stations	.00
Virginia	54.1	−.3	2 stations	95	[1] 18	Mountain Lake	20	17	5.98	+2.62	Big Meadow	13.65	Floyd	2.16
Washington	46.0	−2.0	Kiona	88	14	Bumping Lake	9	6	5.13	+2.65	Big Four	19.68	Hanford	.73
West Virginia	51.4	−.3	Romney	91	18	Rainelle	18	[1] 1	4.09	+.57	Harper's Ferry	8.76	Dam No. 19 O. R.	1.98
Wisconsin	41.7	−1.9	Darlington	83	24	Long Lake	5	3	3.35	+.82	Manitowoc	5.56	Plum Island	1.23
Wyoming	39.3	−.8	2 stations	85	15	Moran	−10	12	1.49	−.08	Dome Lake	5.70	Deaver	.01
Alaska [March]	12.8	−2.3	Craig	62	12	Kotzebue	−48	9	1.51	−.67	Little Portwalter	21.26	2 stations	.00
Hawaii	70.9	+1.0	Mana Pump	90	15	Kanalohuluhulu	45	13	6.63	−1.93	Puohakamoa No. 2	25.60	Kaanapali	.12
Puerto Rico	75.0	.0	2 stations	94	[1] 3	3 stations	54	[1] 1	4.84	+.53	Orocovis (Barros)	13.24	Bayamon	.77

[1] Other dates also.

[2] Soil erosion station.